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In November 1943, Rear Admiral "Tip" Merrill and Captain Arleigh Burke executed one of the most successful engagements of the war against a powerful Japanese surface force. The success at the Battle of Empress Augusta Bay was not luck or happenstance but the logical outcome of commanders combining training, intelligence, and doctrine to create an unbeatable synergy. These lessons are applicable today.

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NAVAL WAR COLLEGE
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Night Fighters Without Equal, Task Force 39 at Empress Augusta Bay

By

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A paper submitted to the faculty of the Naval War College for consideration in the Professional Writing and Research Awards Program for Academic year 2003-2004

Surface Navy Association Prize

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy

Signature: D. C. Fuquea COLONEL, USMC
3 May 2004

Introduction

On the 1st of November 1943, the ships and men of Rear Admiral "Tip" Merrill's Task Force 39 steamed off the west coast of the island of Bougainville, the last island at the northern end of the Solomon Islands chain. Their mission was to protect the landing of the 3rd Marine Division at Cape Torokina in the closing act of the United States' first counter offensive campaign against the Japanese that had begun at Guadalcanal sixteen months earlier. Within hours, Merrill and his trusted destroyer commander, Arleigh Burke, faced the largest and most powerful Japanese surface naval force encountered since the dark and ugly initial naval defeats of the Solomons that killed so many American sailors and littered the bottom of the waters in the Solomons with so many American ships as to earn them the name "Iron Bottom Sound." Yet, just as the Marine force going ashore at Bougainville was far better prepared that its predecessor at Guadalcanal[1], so too was this U.S. Navy task force far better prepared than its predecessors that fought in the night "slug fests" of a year earlier. For Task Force 39, despite being outgunned in nearly every category by the ships commanded by Rear Admiral Omori, several other factors contributed to an unquestionable victory by the United States Navy at the Battle of Empress Augusta Bay. The sailors of Task Force 39 took advantage of, not only maturing technologies but also, more importantly, maturing leadership and cohesion to smash the Japanese with a nearly unbeatable level of skill and confidence. It took nearly two years after Pearl Harbor, but the evolution of the U.S. Navy's night surface combat ability culminated at the Battle of Empress Augusta Bay. The results demonstrated that the much-heralded night-fighters of the Imperial Japanese Navy were no longer a match for their American opponent.

[1] See Fuquea, D.C., "The Amphibious Assault Enters Maturity," Naval War College Review, Winter 1997.

The Japanese

As reports of the United States landings on Bougainville filtered back to Rabaul on the 1st of November 1943, the Japanese commanders were deeply concerned. Seven different airfields on the island, as well as airfields on the Shortland Islands and the island of Choiseul, would be rendered ineffective by American success.[2] More importantly, U.S. airfields this far north in the Solomons meant the shorter range tactical American aircraft could easily reach Rabaul and render this critical base ineffective to the Japanese.

As feared by American planners, the threat to Rabaul made the Japanese leaders respond more ferociously than they had in the last year of bitter fighting in the Solomons. Admiral Koga, Yamamoto's successor as Commander of the Combined Fleet, approved from his base at Truk the request by Rear Admiral Omori to attack. Admiral Omori, then at Rabaul with his cruiser squadron, recommended to Koga and Vice Admiral Tomoshige Samejima that he sail immediately to interdict the landings in irresistible strength. In the early evening of 1 November, Omori led a force south that outstripped anything the Japanese had committed since losing two battle cruisers off Guadalcanal in November 1942.

Omori sailed south with the second largest force to ever conduct surface combat in the Solomons.[3] He had more cruisers than any U.S. Navy commander had seen since the disaster at Savo Island in August 1942. In that engagement sixteen months earlier, seven Japanese cruisers crushed the combined U.S./Australian force that provided

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[2] Paul S. Dull, A Battle History of the Imperial Japanese Navy 1941-1945 (Annapolis, MD: Naval Institute Press, 1978), p. 287.

[3] At 10 ships, Omori's force was only exceeded on the night of 14 Nov 1942 when 14 IJN ships sailed into Iron Bottom Sound.

security to amphibious shipping conducting the initial landings at Guadalcanal. The Japanese sank three heavy cruisers and crippled a fourth in what many still refer to as the greatest tactical defeat in the history of the United States Navy.[4] The Japanese cruisers sailing with Omori were no less deadly.

Two of Omori's cruisers, MYOKO and HAGURO, were the superb 8-inch gun cruisers, each mounting 10 main guns. The remaining two carried smaller caliber main batteries, but all four ships possessed eight of the lethal "Long Lance" torpedo tubes.[5] Although the numbers of main guns carried by these four cruisers was less than the American cruisers they faced, they far exceeded the power of Admiral Merrill's cruisers. The two eight-inch cruisers alone had a broadside weight that exceeded the combined weight of all four of Merrill's cruisers by 10 percent.[6] An individual eight-inch round would easily penetrate and devastate the light armor of any ship in Task Force 39. In return, the main battery of the US cruisers could not even penetrate the Japanese heavy cruiser's main belt armor beyond about 18,000 yards.[7] The light cruiser AGANO, mounted weapons very similar in size to the U.S. light cruisers and was brand new, as were three of Omori's six destroyers. The WAKATSUKI, HATSUKAZE, and NAGANAMI were all bigger and more powerfully armed than all the FLETCHER-class

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[4] Samuel Eliot Morison, History of the United States Naval Operations in World War II, Volume V, The Struggle for Guadalcanal, August 1942 – February 1943 (Edison, NJ: Castle Books, 2001), p. 16.
[5] Hansgeorg Jentschura, Dieter Jung, and Peter Mickel, Warships of the Imperial Japanese Navy, 1869 - 1945 (Annapolis, MD: Naval Institute Press), p. 81-112.
[6] Norman Friedman, U.S. Cruisers, An Illustrated Design History (Annapolis, MD: Naval Institute Press, 1984), p. 479; Jentschura, p. 81; The 4 US cruisers carried 48 6"/47 guns. The total throw weight for a broadside was 5040 pounds. The 2 8" IJN cruisers carried 20 8"/ guns. The total throw weight for a broadside was 5560 pounds.
[7] Office of Naval Intelligence, Combat Narratives, Solomon Islands Campaign, XII, The Bougainville Landing and the Battle of Empress Augusta Bay (Washington, DC: U.S. Navy Publications Branch, March 1945), p. 53.

destroyers that Arleigh Burke commanded.[8] The remaining three Japanese destroyers were all 2000-ton "workhorse" destroyers. Older than their opposite numbers, these still at least matched the FLETCHERs in every category and exceeded the U.S. "greyhounds" by several knots in speed. [9] The greatest inequality between the two opponents still lay, as it had the year before, in torpedoes. All the Japanese ships carried the "Long Lance." The 76 torpedoes available in one salvo could devastate the American fleet before Merrill's cruisers were within gunfire range.[10] In nearly every respect, the Japanese force was bigger, stronger, and faster than the American force. The legacy of Japanese victory and American defeat under similar circumstances was long. The Japanese had every reason to be optimistic.

The Americans

Yet the force led into battle by "Tip" Merrill was very different from the task forces that were so roughly manhandled by the Japanese in the early battles around Guadalcanal. An evolution took place that progressed in much the same manner that the United States progressed up the Solomons: slow and methodical. In multiple areas, men of the United States Navy honed their skills while taking advantage of technological advances to make themselves and their ships superior to the Japanese. In the realm of technology, two areas in particular raised the abilities of U.S. forces to a plane superior to the Japanese. First, improvements in the gunnery system available to Merrill would

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[8] Jentschura, p. 147-151

[9] Ibid. p. 147-151; Raizo Tanaka, "Japan's Losing Struggle for Guadalcanal," U.S. Naval Institute Proceedings (Volume 82, No. 7: July 1956), p. 826; Japanese DDs achieved in excess of 40 knots in battlefield confrontations.

[10] Dull, p. 60; The long lance had a range of 24,000 yards at 49 knots. Merrill's maximum engagement range with his 6-inch guns was approximately 20,000 yards.

overwhelm Omori and the Japanese sailors. Closely related was the possession of truly effective search radar and fire-control radar on every ship. These technological improvements, however, would have been moot without even more valuable improvements in the human aspect of war. In this regard, Merrill and his sailors benefited in three specific areas: knowledge of the enemy, employment of destroyers, and, most importantly, cohesion. The men of Task Force 39 had much better awareness of both the Japanese capabilities and the arrival of the enemy task force as compared to their predecessors. Based upon these, commanders made more effective decisions regarding the tactical disposition of their ships and how the substantial capabilities of the U.S. destroyers could be maximized. Third, but most importantly, Merrill commanded a "battle tested" force of men and commanders. Literally, their months of sailing together in the Solomons created a synergy before the battle that was critical to success. Above technology and beyond tactics, success at Empress Augusta Bay boiled down to a constant that has been present in victorious military formations throughout history, cohesion with and trust in each other.

Gunnery

The four light cruisers that Merrill took into battle were unlike anything the United States Navy employed before the Second World War. The ships were large, exceeding 10,000 tons. Interestingly, the ships were built on essentially the same hull as the wartime generation of heavy cruisers. The difference was less armor and a very different main battery. Each one of Merrill's cruisers mounted a twelve-gun battery of 6-inch/47 caliber guns. The design was not fully understood or appreciated by many and

dismissed as a waste of a big hull with a small gun by others of the pre-war Navy Extensive testing, however, offered great hope for these platforms and their unusual gun system.

The Navy first tested the gun operationally at Guantanamo Bay, Cuba in March 1939. Without any radar, gun crews aboard USS SAVANNAH easily maintained a rate of fire of 10 rounds per gun per minute. This unparalleled speed for the main battery of a cruiser allowed these ships to "simply smother" their targets.[11] Before the war began at Pearl Harbor, those cruisers in service implemented well-developed standard operating procedures (SOPs) for engaging enemy surface targets. Two straddling salvos, one long and one short would bracket a target. Then, gun crews would switch to individual rapid fire.[12] This volume of fire, 150 rounds or more per minute, equated to a single ship throwing over six tons of ordnance to a target in less than 60 seconds. Although Omori's cruisers had a substantial advantage in the throw weight of a single broadside as compared to Merrill's, the rapid volume of fire from the U.S. cruisers allowed them to far exceed the Japanese in ordnance fired per minute. The bigger eight-inch gun was only capable of 4-5 rounds per minute. The best the Japanese could hope for was about half the weight in shells per minute that Task Force 39 cruisers could produce.[13]

Admiral Merrill was intimately familiar with the capabilities of the weapon system. In his first engagement as the Commander of Cruiser Division 12 off New Georgia on 6 March 1943, he employed the "massed rapid fire" technique against two Japanese destroyers. His three light cruisers "massed" by concentrated fire against one

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[11] L.S. Howeth, History of Communications Electronics in the United States Navy (Washington, DC: U.S. Government Printing Office, 1963), p. 207.
[12] Ibid.
[13] Friedman, Cruisers, p. 479; Jentschura, p. 81: 4 CLs, 1260 lb broadside per ship X 10 broadsides per minute = 50,400 lbs. 2 CAs, 2830 lb broadside per ship X 5 broadsides per minute = 28,300 lbs

ship at a time. The Americans sank the first Japanese destroyer on the 6th salvo and the second three minutes later. Both victims fell prey at ranges in excess of five miles in the dark.[14] In a short 16 minutes, the Task Force Commander and his cruiser captains became zealous believers in their 6-inch gun systems.

On the morning of 2 November 1943, Merrill and his cruiser captains employed this technological improvement. The four ships massed fires at the first large target detected the Japanese light cruiser SENDAI.[15] The SENDAI and her crew were no strangers to night combat in the Solomons, having survived as members of the Japanese task force that opposed U.S. battleships on 15 November of the previous year. On this run, however, the first three salvos from the American cruisers slammed squarely in to the veteran ship.[16] "She was almost literally smothered by flying metal and erupted in flame."[17] The ship went dead in the water. By the end of the battle, SENDAI became the newest resident of the bottom of Iron Bottom Sound, with over 400 of her crew.[18] The American technological advancement helped draw first blood for Merrill and his sailors.

Radar

The effectiveness of the cruiser gun system would have been greatly reduced without the second, and arguably the most important, technological improvement within the American fleet: radar. Yet, radar had been present and employed in all the previous engagements. The key difference at Empress Augusta Bay was the presence of effective

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[14] Samuel Eliot Morison, History of the United States Naval Operations un World War II, Volume VI, Breaking the Bismarcks Barrier, 22 July 1942 – 1 May 1944 (Edison, NJ: Castle Books, 2001), p. 108-110.
[15] Ken Jones, Destroyer Squadron 23, Combat Exploits of Arleigh Burke's Gallant Force (Annapolis, MD: Naval Institute Press, 1997), p. 225.
[16] Dull, p. 289.
[17] Ibid.
[18] Ibid, p. 290.

search and fire control radar on each ship in Task Force 39 and the expertise with and belief in the systems to make them worthwhile.

As Merrill's task force entered Empress Augusta Bay, search (S) radar in the United States Navy was less than five years old.[19] Fire control (FC) radar was even more recent. Bell Laboratories built the first Mark 3 fire control radar in the spring of 1941[20] and installed the first set aboard the USS PHILADELPHIA only two years before the battle at Empress Augusta Bay.[21] Every level of the military recognized the importance of radar. The Joints Chiefs of Staff directed the War Production Board to give search radar the highest priority possible under the complicated procurement framework developed and the hundreds of priorities possible.[22] The American electronics industry produced nearly 900 air search (SC) sets in the first two years of the war.[23] Raytheon Corporation first produced the surface search (SG) set in June 1941 and nearly 1000 more by the autumn of 1943.[24] The excellent Mark 3 and its improved version, the Mark 8, provided precise fire information for the main batteries of cruisers and battleships. The equally precise Mark 4 provided the fire control data for the dual-purpose, 5-inch batteries aboard destroyers. The fire control radar sets reached the fleet in equivalent numbers at the same time as the search sets.[25] Unlike his predecessors from the year before, Merrill and all his captains entered battle with the same radar assets. Every ship in the force had air search,

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[19] William Boyd and Buford Rowland, U.S. Navy Bureau of Ordnance in World War II (Washington, DC: Department of the Navy, 1948), p. 414. Technicians from the Naval Research Laboratory installed the first surface search radar set aboard the USS New York in Jan/Feb 1939. The earlier prototype installed aboard the World War I destroyer LEARY in 1937 was never successful.
[20] Norman Friedman, Naval Radar (Annapolis, MD: Naval Institute Press, 1981), p. 83-84.
[21] Howeth, p. 466.
[22] Robert Buderi, The Invention that Changed the World (NY, NY: Simon and Schuster, 1996), p. 430.
[23] Friedman, Naval Radar, p. 146.
[24] Ibid, p. 147.
[25] Boyd and Rowland, p. 427.

surface search, and fire control radar.[26] On that moonless, overcast night[27] as Admiral Merrill closed to engage the enemy, all his commanders saw what he saw, and he saw what all his commanders saw. The Japanese commanders saw very little.

The Japanese ships first appeared on American radar screens at a range of approximately 18 miles.[28] One great advantage for the U.S. radar operators was for the first time there was no clutter or background from surrounding islands to hide the Japanese ships. Unlike anywhere else the two sides fought in the Solomons, behind Admiral Omori's fleet was only open ocean, making long-range detection much more effective. Also unlike several of their predecessors, these U.S. captains had used radar extensively and believed in this equipment and the information it provided. Immediately upon contact, using only the picture provided by the surface search radar, the four destroyers of Arleigh Burke's Destroyer Division 45 accelerated and headed directly for the lead Japanese ship in order to conduct a torpedo attack before Admiral Merrill unleashed the fire of his cruisers. Meanwhile, on every ship, SG radar operators fed information from the combat information centers (CICs) to the operators of the fire control radars. Using this guidance, the FC operators soon coaxed their very narrow radar beams on to the Japanese ships and U.S. main batteries "locked on" to targets.

Arleigh Burke's flagship, CHARLES AUSBURNE, fired torpedoes eighteen minutes after the initial radar contact without ever gaining a visual sighting of the enemy ships. All four destroyers conducted the entire torpedo attack using only radar plotting

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[26] Norman Friedman, U.S. Destroyers, An Illustrated Design History (Annapolis, MD: Naval Institute Press, 1982), p. 60-122; Friedman, Cruisers, p. 184-318.
[27] Office of the Commander in Chief, U.S. Fleet, Information Bulletin No. 14 (Washington, DC: Department of the Navy, May 1944), p. 2.
[28] Ibid, p. 55.

information.[29] When Admiral Merrill ordered his cruisers to fire only a couple of minutes later, the range to their target was over eight miles. The first salvos that crushed the SENDAI struck with only radar plotting information from the FC operators to guide them.[30] Admiral Merrill and his cruiser captains maintained similar ranges to all targets throughout the engagement, never once using visual spotting to execute their "massed rapid fire."[31]

The radar picture was far from perfect. The small size of the surface search radar screens, the expanse of the engagement area, and the distances between some friendly ships meant at times during the fight ships went off the displays. This caused some confusion when a ship reentered a friendly radar screen.[32] Operators on several ships reported four enemy ships in the Japanese center column when there were never more than two.[33] These challenges mattered little. The impact of the initial radar-only torpedo and gunfire attacks threw the Japanese into a maelstrom. Quick maneuvers in reaction to the unexpected attacks contributed directly to two collisions and multiple near misses. The collisions were fatal to one Japanese destroyer and caused extensive damage to two other destroyers and a heavy cruiser.[34] The technological advantage that radar played was important while the expertise of the commanders with it was even more so. The two together were a key element to the superiority of the U.S. naval forces that night.

Knowledge of the Enemy

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[29] Jones, p. 224.
[30] CinC, US Fleet, p. 55.
[31] Ibid.
[32] Ibid, p 68-71.
[33] Ibid, p. 19, p. 51.
[34] Dull, p. 290.

As important as the technological improvements were to Merrill and his force, the human elements, like expertise with radar, contributed as much if not more. The first of three specific areas was in the field of intelligence. Holding true to the axioms of the Chinese philosopher on War, Sun Tzu, Merrill and his captains "knew their enemy" much better than their predecessors.

The deadly Japanese 24-inch torpedo devastated American surface units in the first eighteen months of the war. Between the Battle of Savo Island in August 1942 and the Battle of Tassafaronga four months later, the "Long Lance" destroyed six cruisers and two destroyers and crippled five other heavy cruisers.[35] The Japanese perfected the weapon before the war. With a 20,000-yard range, 770 pounds of explosive, and 49 knots of speed, it had triple the range, double the warhead and greater speed than the American counterpart.[36]

Yet despite the recognition at the time of the battles that torpedoes inflicted these losses on the Americans, by the summer of 1943 the U.S. Navy remained largely ignorant of this Japanese weapon.[37] In some respects, American racist attitudes toward the Japanese prevented an objective evaluation of the evidence and caused a drastic underestimation of the enemy's capabilities.[38] Many Navy officers attributed the losses to submarine torpedoes because there was no way that the Japanese could have built a torpedo with such capabilities if the Americans could not. Even as some began to believe in the superiority of the Japanese torpedoes, many still dismissed the impact. Prior to the Battle of Kula Gulf in July 1943, Captain Cecil of the HELENA discussed the rumors of

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[35] Sunk: Cruisers Canberra, Quincy, Vincennes, Northampton, Atlanta, Juneau. Destroyers Benham, Walke
Crippled: Cruisers Chicago, Portland, Minneapolis, New Orleans, Pensacola

[36] Tanaka, p. 698; 7. p. 195-196.

[37] Morison, Vol VI, p. 196

[38] Tanaka, p. 831.

superior Japanese torpedoes with Rear Admiral "Pug" Ainsworth, his task force commander for the battle[39]. Yet, Ainsworth still closed on the Japanese force, and, ironically, a "Long Lance" crippled HELENA. After action evaluations of the battle estimated that the torpedo that hit HELENA must have traveled at least 8,000 yards at a minimum of 40 knots.[40] By the time Commander Mooseberger fought Japanese destroyers a month later, Admiral Wilkinson cautioned him prior to the engagement regarding the superiority of Japanese torpedoes.[41]

In their planning for Empress Augusta Bay, Merrill and Burke were under no illusions. The Japanese torpedoes were far superior to their own, and the Japanese tactics for employing their torpedoes were far more aggressive than their own. The two American commanders concurred that the Japanese, if given the chance, would try to launch from as far away as 24,000 yards from their targets and would launch in mass numbers.[42] This knowledge and appreciation for the enemy's capabilities led them to make two adjustments to the battle plan for Task Force 39. Merrill's cruisers conducted radar-calibrated gunfire practice nearly every month, straddling targets with their initial salvos at 20,000 yards.[43] Merrill, with his confidence in his cruisers' gunfire, would keep his ships at their maximum range of about 18,000 to 20,000 yards or around the maximum range for Japanese torpedoes. Additionally, Merrill planned to maintain a relatively high speed of 28 knots and maneuver rapidly and often once in contact with the enemy. He believed these steps would allow him to engage effectively with gunfire but, if not stay out of "torpedo water," complicate the solution for the Japanese torpedo men and

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[39]Morison, Vol VI, p. 196.
[40] Friedman, Cruisers, p. 324.
[41] Morison, Vol VI, p. 213.
[42] Jones, p. 179.
[43] CinC, US Fleet, p. 56.

force them to miss with any torpedoes that they did fire.[44] At the end of the engagement, each American commander believed the Japanese fired torpedoes at them, and several conducted radical evasive maneuvers.[45] Japanese reports indicated at least 60 torpedoes did launch,[46] but not a single one hit Merrill's critical surface units, his cruisers.

Employment of Destroyers

The second adjustment agreed to by Merrill and Burke was also the second improvement in the human aspect that contributed so greatly to the superiority of the American night fighters. Both commanders understood they needed to change the way they employed their destroyers. In May 1943, after several months in the Solomons theater gaining experience and reading combat action reports, Burke completed a 22-page manifesto for how destroyers should be employed and carry out torpedo attacks against the Japanese.[47] Within days of assuming command of Destroyer Squadron 23, he presented his proposals to Admiral Merrill. In several face-to-face conferences between the two before the invasion of Bougainville, they agreed that in the event of enemy contact detaching Burke's destroyers from Merrill's battle line to conduct an aggressive torpedo attack against the enemy formation was the most effective use of the destroyers. With this as the SOP, Burke needed no approval from Merrill to accelerate into the attack, only enemy contact. The two also agreed that Merrill's cruisers would hold their fire until Burke's torpedoes were in the water headed toward the enemy in order to prevent early maneuvering by enemy ships that would spoil the American torpedo firing

[44] Ibid, p. 56.
[45] Ibid, p. 33.
[46] Dull, p. 289.
[47] Jones, p. 4.

solutions. Finally, Merrill would release Destroyer Division 46, the other half of Burke's Squadron, from the rear of the formation in order to execute a second aggressive torpedo attack against enemy units. This would put the enemy in an intractable situation, trying to maneuver to spot and avoid American torpedoes while under the withering fire of the cruisers' six-inch guns.[48]

This was truly a paradigm change from the employment of destroyers previously in the Solomons.[49] Only the courage of Merrill and Burke allowed this fundamental shift and advancement within the human element. In the previous encounters with the Japanese, destroyers remained in the battle line either ahead or behind the cruisers. Independent maneuver was not calculated for or incorporated into battle plans. The limited range of the American torpedoes meant that from the destroyers' positions surprise with the weapon would never be achieved. This aggressive new plan proposed by Burke and approved and massaged by Merrill allowed the American's to present the Japanese with a "hornet's nest" they had never encountered before from American forces.

As it was, in the engagement Japanese sailors spotted Burke's destroyers within minutes of the U.S. torpedo launch but not the cruisers. Subsequent maneuvering by the Japanese spoiled the aim of Burke's torpedo men, and the torpedoes missed. The American battle plan, however, was still successful. Merrill held fire as Burke attacked and initiated fire at about the same time as the Japanese began maneuvering to avoid Burke's torpedoes. Burke, meanwhile, readjusted and closed to reattack as the cruisers pummeled the Japanese ships and Destroyer Division 46 closed for its own independent torpedo attack from a different direction. As intimated earlier, the turmoil in these

[48] Ibid, p. 179, 184; Morison, Vol VI, p. 307.
[49] In the five surface battles of the autumn of 1942, all task force commanders kept their destroyers within the battle line formation.

opening minutes contributed greatly to the Japanese collisions and to Admiral Omori's belief that he had the proverbial "tiger by the tail," giving him no choice but to withdraw immediately without any hope of accomplishing the mission for which he had sailed south.

Cohesion and Leadership

The successful integration of technological improvement and adaptation within the human element brought an American victory that was unparalleled in the bitter fighting to that point in the Solomons. The blending of and synergy provided by improvement and adaptation were products of the last and most important aspect in the evolution of the U.S. Navy's surface night-fighting capability. By Empress Augusta Bay, American surface forces attained a remarkable level of cohesion and combat leadership experience. Admiral Merrill and his captains entered battle having worked, trained and fought together for extended periods. The cruiser and destroyer divisions were tightly knit. Every ship had months already operating in the theater which created fused crews that knew their drills and executed precisely. The senior commanders had been closely allied in multiple combat situations already. The junior commanders had less combat time but more time as the "skipper" of their individual ships, which created well honed teams on every American platform. It was this cohesion that allowed the successful integration of technological improvements and adaptation of the human element. It was this cohesion that created the synergy by which Task Force 39 routed the Imperial Japanese Navy at Empress Augusta Bay and set a new standard for night naval combat in the Pacific that the United States Navy would not relinquish for the remainder of the war.

Rear Admiral Merrill was a destroyer man himself, having served on destroyers in the United Kingdom during the First World War as well as his first command. He also commanded multiple destroyer divisions and squadrons, which undoubtedly contributed to his belief in the abilities of destroyers and his concurrence with Burke's proposals. He was also the commissioning commanding officer of the new "fast" battleship INDIANA.[50]When commissioned in 1942, the new battleship had all the newest models of SC, SG, and FC radars. Merrill spent nearly a year in command of the INDIANA and gained a strong appreciation for the capabilities of these systems before he even entered the Solomons Theater in January 1943. He had ten more months as the commander of Cruiser Division 12 in the waters of the Solomons before the Battle of Empress Augusta Bay. He became intimately familiar with his area, his captains, his enemy, and his ships.

Merrill and his cruisers worked "The Slot" for weeks at a time through the spring and summer of 1943. Under his command, multiple bombardments of Japanese installations up the island chain helped reduce enemy strength. As related previously, in March 1943 he and three of his cruisers destroyed two Japanese destroyers off the coast of Kolombangara.[51] For much of the autumn before Bougainville, his force interdicted Japanese barge operations on a nightly basis.[52] He and his captains knew the waters in the Solomons as well as any U.S. or Japanese Navy skipper.

His captains were equally as experienced and knew their commander from extended time working together. Captain Burke arrived in the Solomons at nearly the same time as Merrill. Burke commanded Merrill's destroyer screen at Kolombangara in

[50] Morison, Vol VI, p. 106.
[51] Ibid, p. 106-110.
[52] Ibid, p. 241.

March.[53] Merrill actively recruited men he knew and trusted. His cruiser division chief-of-staff was Commander William Brown. Brown commanded Destroyer Division 42 in the later battles around Guadalcanal in the fall of 1942.[54] Merrill's four cruiser captains had 17 surface engagements between them before Empress Augusta Bay. Captain Tobin of the flagship MONT PELIER witnessed the destruction of U.S. ships firsthand as the commander of destroyers in two battles off Guadalcanal in the fall of 1942.[55] Tobin and Captain Shepard of CLEVELAND joined Merrill as cruiser COs six months before Bougainville.[56] Captain Beatty of COLUMBIA had even more time steaming with Merrill. He joined the cruiser division in the spring of 1943.[57] Captain Briscoe of the DENVER had the least time as one of Merrill's captains. He joined his ship only 90 days before Bougainville. Briscoe, however, prior to this assignment commanded Admiral Halsey's "Cactus Strike Force" around Guadalcanal for several months in early 1943.[58] Additionally, Briscoe, like Burke, had steamed with Merrill before as a destroyer division commander.[59]

The wealth of experience held by Merrill and all his subordinates provided the cohesion and trust necessary to execute the difficult maneuvers Merrill knew were required for success. One of the Admiral's innovations was to establish 28 knots as the cruiser division battle speed. Based upon his experience, he concluded that sailors in any navy always calculated contact reports, speed estimates, and fire control solutions in five-

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[53] Jones, p. 128-132.
[54] Fletcher Pratt, Night Work, The Story of Task Force 39 (NY, NY: Henry Holt and Co., 1946), p. 13.
[55] Ibid, p. 125.
[56] Ibid, p. 130.
[57] Ibid, p. 67.
[58] Morison, Vol V, p. 367-370. Admiral Halsey maintained a force of destroyers in close proximity to Guadalcanal for the first several months of 1943 to provide a quick reaction to Japanese threats. The nickname for the force was the "Cactus Strike Force."
[59] Pratt, p. 46.

knot increments. Merrill referred to this as a "human frailty." Therefore, steaming his ships at 28 knots would cause the enemy's rounds (figured with range and deflection fire control solutions based upon either 25 or 30 knots) to be just ahead or just behind their targets. Most enemy salvos at Empress Augusta Bay landed "just ahead" of the U.S. cruisers.[60] Only one of the cruisers was touched by enemy gunfire, sustaining minor damage. He knew his enemy. His knowledge of his ships' capabilities and his trust in their captains allowed the formation to steam at this speed, in the dark, with no lights, for the entirety of the engagement, executing no less than 18 radical maneuvers in under two hours with no degradation to the cruiser formation or gunfire.[61] He knew his ships.

Burke was able to quickly create a similar level of cohesion with his commanders. He already knew his commander by virtue of his extensive time working with the Admiral already. What he needed was to gel Destroyer Squadron 23 quickly as they sailed for Bougainville only eight days after he took command. Fortunately, he had some important aspects in his favor in his eight destroyer commanders. Seven of them graduated from the U.S. Naval Academy within a year of each other, four with the class of 1926 and three with 1927. Three of these officers shared the same battalion through their four years at school.[62] On the whole, they all had more command time on their platform than any of the cruiser captains. They averaged ten months in command of their ships as of 1 November 1943, with six of the eight having been the commissioning skipper for his boat. Captain Ramsay had the least, only 5 months in command as the task force sailed for Bougainville, but he too had been a part of the commissioning crew for

[60] CinC, US Fleet, p. 56.
[61] Ibid, p. 17.
[62] Jones, p. 97-152.

his ship, the FOOTE.[63] In terms of experience in the Solomons, the eight ships averaged nearly four months in the islands before they entered Empress Augusta Bay, and each, except CONVERSE, had at least one combat engagement.[64] Individually, the ships of the squadron were "tight" internally. Burke had to take capitalize on these advantages and fuse the entire squadron.

Burke was frustrated during his early months in the theater by the inability to bring his captains together. He vowed not to let this happen to Destroyer Squadron 23 as he took command.[65] The first afternoon after breaking his command pennant aboard CHARLES AUSBURNE, he met face-to-face with four of the eight skippers at Purvis Bay near Tulagi.[66] Within two days he brought all eight together and reviewed, in detail, his manifesto on destroyer tactics completed earlier that year. All the destroyer captains already knew Burke by reputation and relished his aggressive attitude, clear instructions, and doctrine of attack for the destroyers. Five of the destroyers, with Burke embarked on his flagship, sortied on 26 October and escorted Merrill and two cruisers to Choiseul Island to cover landings of Lieutenant Colonel "Brute" Krulak's parabattalion of Marines as a diversion to the main landings at Bougainville.[67] After this action, Burke met again with his captains after Merrill approved the battle plan to reinforce the SOPs and ensure every officer was in sync with Burke. "Each [destroyer commander] knew the method of attack that would be employed under all circumstances. Also, the battle plan of the

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[63] Ibid, p. 148.
[64] U.S. Navy Historical Branch, Ships' History, Charles Ausburne, Claxton, Cleveland, Columbia, Converse, Denver, Dyson, Foote, Mont Pelier, Spence, Stanly, Thatcher, (U.S. Naval War College Web Site: www.nwc.navy.mil/usnhdb)
[65] Jones, p. 35.
[66] Ibid, p. 31.
[67] Ibid, p. 173.

cruisers was known to all."[68] Similar to the cruisers, the destroyers entered the battle as an experienced, cohesive unit with a well-rehearsed plan, confident and trusting in each other. Only this level of cohesion, externally between ships and internally to each ship's crew, could afford the commander the opportunity to make the following comment.

> **Successful actions result from the exercise of initiative by well indoctrinated subordinates. In this engagement, the Task Force Commander gave the destroyer commander complete freedom of action and relied upon aggressive doctrine instead of detailed orders.**
>
> Admiral "Tip" Merrill[69]

Epilogue

As Admiral Omori and his force departed Rabaul for their mission, American observation planes tracked their movement and passed accurate contact reports (in 5-knot increments) that reached Admiral Merrill in a timely manner.[70] Merrill calculated his interception point and cruised in the vicinity of the area at low speed after dusk to ensure the wakes of his ships did not give away his force to Japanese spotter planes.[71] The reports of the American spotter planes were "phenomenally accurate," and the estimate by Admiral Merrill's staff of the time of the Japanese at the intercept point was only three

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[68] CinC, US Fleet, p. 65.
[69] Ibid, p. 69.
[70] Office of Naval Intelligence, p. 51.
[71] CinC, US Fleet, p. 10-11.By this time in the war, experienced captains knew that pilots could pick up the wakes of ships traveling in excess of 25 knots on even the darkest of nights.

minutes early.[72] Admiral Merrill and Captain Burke capitalized upon their technological improvements and human adaptations to execute a battle plan that remained true to their script. The result was Admiral Omori never knew what hit him. Surprise of the Japanese was nearly complete as torpedoes infested the water and 6-inch gunfire the air around the Emperor's ships. That collisions caused as much, if not more, damage as U.S. ordnance was immaterial given that the collisions resulted from the devastating reception from the cohesive attack of Task Force 39.

Despite the clear material superiority going into the fight, after little more than an hour of combat, Admiral Omori retired back to Rabaul without 20% of his force and an additional 30% severely damaged.[73] Through the evolution of technological and human skills, the sailors of the United States Navy's Task Force 39 inflicted a devastating defeat on a foe who only months before had routinely crushed their fellow American sailors. Most importantly, it was the cohesion of the force that blended equipment and people and created the synergy of skill that brought the victory and ensured that United States night fighters reigned supreme. Never again in the war would Japanese night surface attacks challenge the United States Navy.

[72] Ibid, p. 68.
[73] Dull, p. 290.

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